Projects at Palomar

New and traditional roles for the Caltech Library

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Caltech Library

TOC

Astronomy at Caltech

- Cahill Building
- Includes a small astronomy branch library

Caltech Library

Pasadena, Palomar, & Owens Valley

- Caltech is located in Pasadena
- Palomar is located in San Diego County. ~120 miles south-east of campus
- OVRO is located in Lone Pine, CA in Inyo County. Almost 300 miles north of Caltech

Caltech Library

Palomar Mountain

Telescopes:

- 200-inch Hale Telescope
- 48-inch Samuel Oschin Telescope, 1948+
- 60-inch telescope
- 18-inch Schmidt Telescope, 1936-199x

Caltech Library

Logbook Project

- Bumpy beginnings!
- Initially no plan for digital or print archiving at Caltech
- Very important to spend time building trust with collection guardians
- Mountain / Caltech / Library / Archives - culture
- Perception of Archives as a ‘black box’
- Subject Librarian / Circulation staff / Library IT / Archives

Caltech Library

Palomar Observatory Logbooks

File Edit View Insert Format Data Tools Add-ons Help Last edit was seconds ago

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Page 58 notes images of Haro's 1952 novae. Starting on page 72 Wild observers nova fields 1-16. There are notes on pages 200+ about the Seeing Project and Program. On page 224 theres a note about a supernova discovered by Paul Wild, a visiting astronomer from Switzerland, in NGC 5668. Page 232 includes a note about Comet Abell, 1953g being photographed. Page 248 includes a note about a Supernova in 4214. Page 250 includes notes from Observer Gates about a Comet Search program.

	A	B	C	D	E	F	G	H
1	Telescope	Log type	Volume	Start date	End date	Observers	Projects	Note(s)
2	18-inch	Plate	1	1936-09-05	1937-11-05	|Zwicky, Fritz|	Comet Whipple was observed in this record beginning on page 49. C	
3	18-inch	Plate	2	1937-11-07	1938-12-31	|Zwicky, Fritz|	There's a note on page 101 that supernova in IC 4182 was being obs	
4	18-inch	Plate	3	1939-01-11	1940-03-12	|Zwicky, Fritz|	Page 7 indicates that observers took the first picture of Supernova N(	
5	18-inch	Plate	4	1940-03-12	1941-05-27	|Zwicky, Fritz|Duncan, Dr.|Weaver, Harold F. [?]	There's are notes on pages 3-7 about	The last page indicates that th
6	18-inch	Plate	5	1941-05-31	1945-01-07	|Zwicky, Fritz|Weaver	Page 9 indicates pictures were taken c	The last page indicates that th
7	18-inch	Plate	6	1945-01-13	1948-05-14	|Zwicky, Fritz|Johnson|Wilson|Rule|Nicholson|Olsen|	Page 13 indicates that pictures taken are part of Virgo Cluster Progra	
8	18-inch	Plate	7	1948-06-08	1949-12-13	|Wilson|Nicholson|Johnson|Herzog, E.|Zwicky, Fritz|Whittlesey|Duncan|Omer-Mills|		The last page indicates that th
9	18-inch	Plate	8	1949-12-13	1950-08-16	|Herzog, E.|Zwicky, Fritz|Whittlesey|		On page 98, while Zwicky is o
10	18-inch	Plate	9	1950-09-04	1951-09-27	|Zwicky, Fritz|Gates, H.S.|Herzog, E.|Holmberg|Wild, Paul|		The first page indicates that th
11	18-inch	Plate	10	1951-09-28	1955-01-28	|Gates, H.S.|Wild, Paul|Holmberg|Zwicky, Fritz|	Page 58 notes images of Haro's 1952	novae. Starting on page 72 W
12	18-inch	Plate	11	1955-03-20	1958-10-13	|Gates, H.S.|Wild, Paul|Duncan|Feige|Zwicky, Fritz|He	Comet Peter Cherbak (157d) was observed in this record on page 19	
13	18-inch	Plate	12	1958	1962	|Gates, H.S.|Herzog, E.|Rudnicki, K.|Gomes|		
14	18-inch	Plate	13	1962	1965	|Gates, H.S.|Herzog, E.| Rudnicki, K.|Kowal|Kocher|van Woerden, H.|		
15	18-inch	Plate	14	1965	1966	|Gates, H.S.|Herzog, E.|Barbon, R.|Rudnicki, K.|Kocher, G.S.|		
16	18-inch	Plate	15	1966	1972	|Barbon, R.|Gates, H.S.|Kowal|Rudnicki, K.|Herzog, E.|Zwicky, Fritz|Fairall|Veeder|Kowal|Oemler|Kirshner|Helin|Bruman|Ge	
17	18-inch	Plate	16	1972	1973	|Aaronson|Huchra|Green|Helin|Mosher|Smith|Shoemaker|Bruman|[M]achez[?]|		
18	18-inch	Plate	17	1973	1974	|Helin|Green|Huchra|Kowal|		

Inventory | Observers | Second batch check out | Costs | 18-inch costs | Explore

2.V.1957 (cont'd)

TIME	α	δ	REMARKS
10^{06} p.m.	11-02	+5°27'	
10^{17}	11-18	+5 09	
10^{24}	11-40	+5 01	
10^{48}	12-38	-11 26	NGC 4594 ; polaroid N-S
11^{11}	12-38	-11 26	" ; " E-W
11^{33}	12-26	+12 24	NGC 4486
11^{55}	12-59	+ 4 37	

3.V.1957

0^{04} a.m.	13-20	+ 5 25	
0^{12}	13-39	+5 03	
0^{29}	14-02	+5 08	
0^{37}	14-20	+ 4 31	supernova discovered in NGC 5668
0^{46}	14-38	+5 17	" " " " "
2^{20}	17-45	-21°	NF 4

EXPOSURE	FILM	FOCUS & TEMP.	OBSERVER
10 min.	Eastman 103a-O	4	[illegible]
5 "	" "	4	"
5 "	" "	4	"
15 "	" "	4	"
15 "	" "	4	"
10 "	" "	4	"
5 "	" "	4	"
5 "	" "	4	"
5 "	" "	4	"
5 "	" "	4	"
5 "	" "	4	"
5 "	" "	4	"
5 "	" "	5 50°F	"

4.V.1954 (cont.'d)

TIME	α	δ	REMARKS
3^{32} a.m.	18-45	-7°	NF 9
3^{39}	19-15	-7°	NF 11
9^{41}	14-36	+2°15	Supernova discovered by Paul Wild, visiting astronomer from Switzerland, in NGC 5668!
10^{11}	14-36	+2°15	
10^{35}	14-36	+2°15	
10^{36}	14-36	+2°15	
11^{15}	14-36	+2°15	
11^{30}	14-36	+2°15	

5.V.1954

1^{22} AM	18-15	-16°45	
2^{39}	14-31	+4°40	Attached 4° objective prism.
2^{53}	14-31	+4°40	Prism.
3^{05}	18-22	-18°12	"
3^{17}	18-22	-18°12	"
3^{38}	18-22	-18°12	"

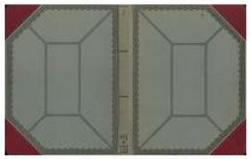
14-1396

EXPOSURE	FILM	FOCUS	TEMP.	OBSERVER
4 min.	Eastman 103a-O	5		Wild
4 "	" "	5	51°F	"
13 min.	Du Pont Commercial	48	50°F	WILD + GATES
33 "	" "	"	~~48°F~~	"
½ "	Eastman 103a-O	5		"
1 "	" "	"		"
5 "	" "	"		"
20 "	" 103a-E, + F 29	2		"
5 "	" 103a-O	5	52°F	"
7 "	" 103a-E	8		"
12 "	"	"		"
3½ "	"	"		"
7 "	"	"		"
9 "	"	"		"

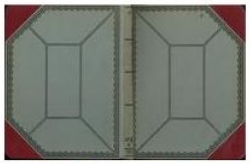
Palomar Observatory Logbooks

Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 1
(1936 to 1937)

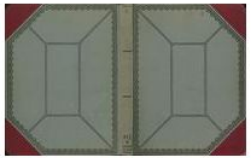
Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 2
(1937 to 1938)



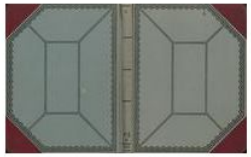
Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 3
(1939 to 1940)



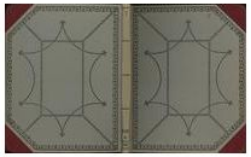
Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 4
(1940 to 1941)



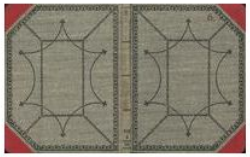
Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 5
(1941 to 1945)



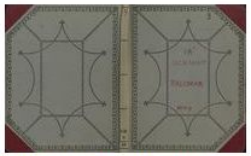
Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 6
(1945 to 1947)



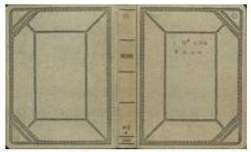
Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 7
(1948 to 1949)



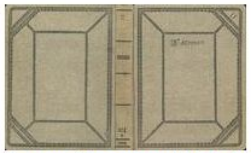
Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 8
(1949 to 1950)



Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 9
(1950 to 1951)



Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 10
(1951 to 1955)



Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 11
(1955 to 1958)

Palomar Observatory 18-inch Schmidt Telescope Plate Logbook, Volume 12
(1958 to 1962)

Next steps?

Linked Data? ADS?

Handwriting translation software

Transcribers? Volunteers?

More logbooks? Plates?

Wild, P. Light curves of the Supernovae of 1954. PASP 72:425 p.97

LIGHT CURVES OF THE SUPERNOVAE OF 1954

PAUL WILD

Astronomical Institute, Bern, Switzerland

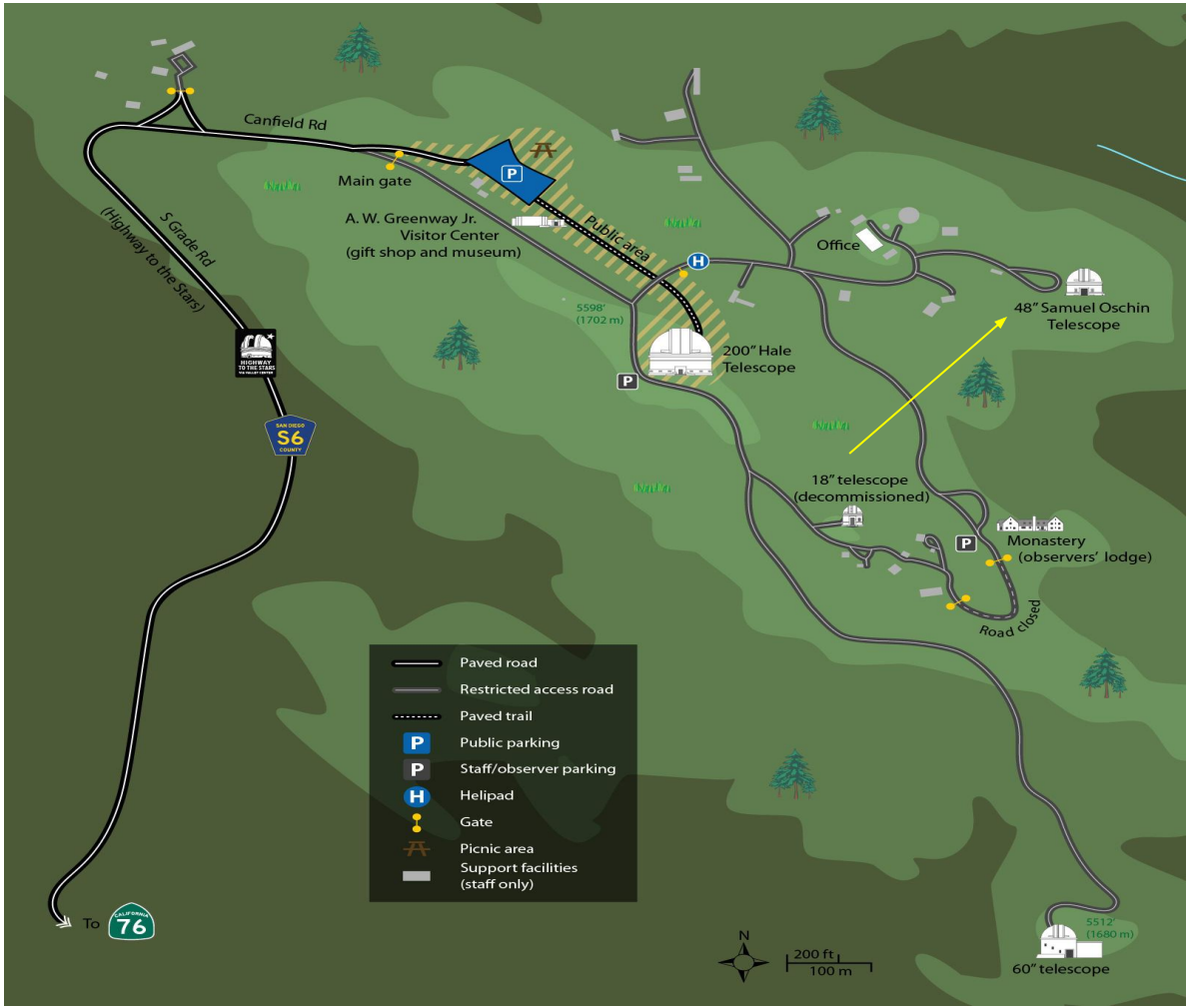
In the year 1954 three supernovae were found by the writer with the Palomar 18-inch Schmidt telescope. The photographic magnitudes given hereafter were determined not from one homogeneous set of observations, but with several widely different instruments and by different methods.

NGC 5668

The supernova in NGC 5668 ($\alpha = 14^h\ 30^m9$, $\delta = +4°\ 40'$ [1950], type Sc) was estimated too faint at mag. 14 on the date of discovery, May 4, 1954. In reality it was then of $m_{pg} = 12.6$ and already on the decline. Photometry proved somewhat difficult and uncertain because of the supernova's position within the nebula, only 32″ south of the nucleus. On 18-inch films (103a-O) with direct (d) or schraffiert (s) images and on a few 48-inch Schmidt plates, the supernova was compared (Table I) with a

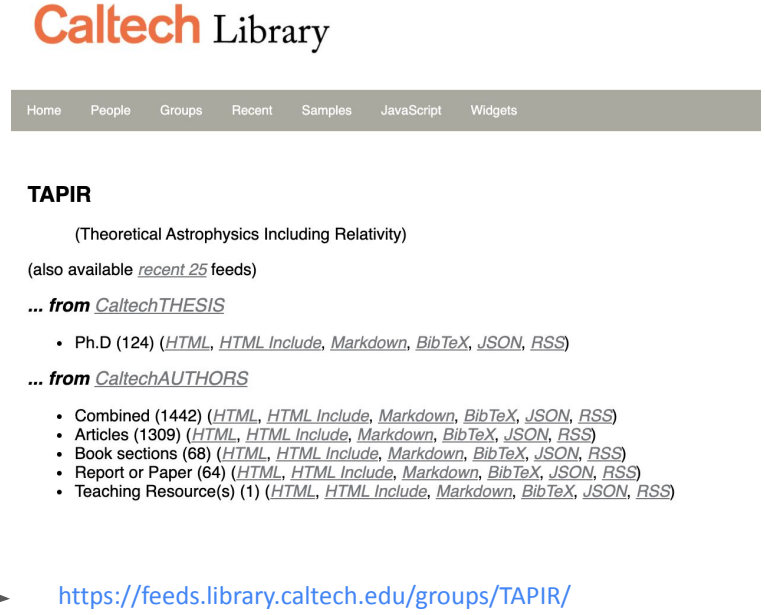
TABLE I

Project 2 - Publications



CaltechAUTHORS

- Our institutional repository
- 2009+, 93k records
- Groups 2012+
- https://authors.library.caltech.ed
- https://thesis.library.caltech.edu/
- https://data.caltech.edu/ ++
- Publications can be tagged across these repositories w same group names across
- Feeds

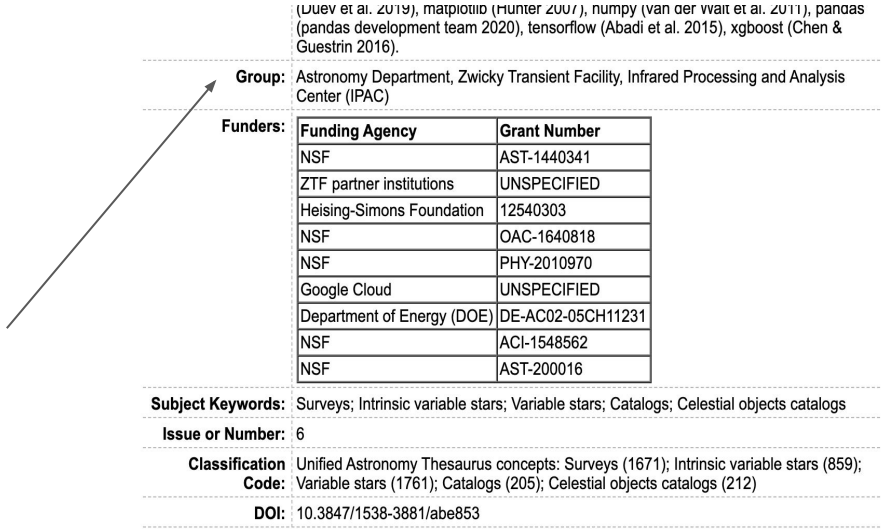


https://feeds.library.caltech.edu/groups/TAPIR/

Caltech Library

Using our IR to track campus research output

- Anything Caltech-authored gets added to our IR
- Use group names in metadata field
- Can enter as many groups as are identified in the affiliation field or acknowledgements section



(Duev et al. 2019), matplotlib (Hunter 2007), numpy (van der Walt et al. 2011), pandas (pandas development team 2020), tensorflow (Abadi et al. 2015), xgboost (Chen & Guestrin 2016).

Group: Astronomy Department, Zwicky Transient Facility, Infrared Processing and Analysis Center (IPAC)

Funders:

Funding Agency	Grant Number
NSF	AST-1440341
ZTF partner institutions	UNSPECIFIED
Heising-Simons Foundation	12540303
NSF	OAC-1640818
NSF	PHY-2010970
Google Cloud	UNSPECIFIED
Department of Energy (DOE)	DE-AC02-05CH11231
NSF	ACI-1548562
NSF	AST-200016

Subject Keywords: Surveys; Intrinsic variable stars; Variable stars; Catalogs; Celestial objects catalogs

Issue or Number: 6

Classification Code: Unified Astronomy Thesaurus concepts: Surveys (1671); Intrinsic variable stars (859); Variable stars (1761); Catalogs (205); Celestial objects catalogs (212)

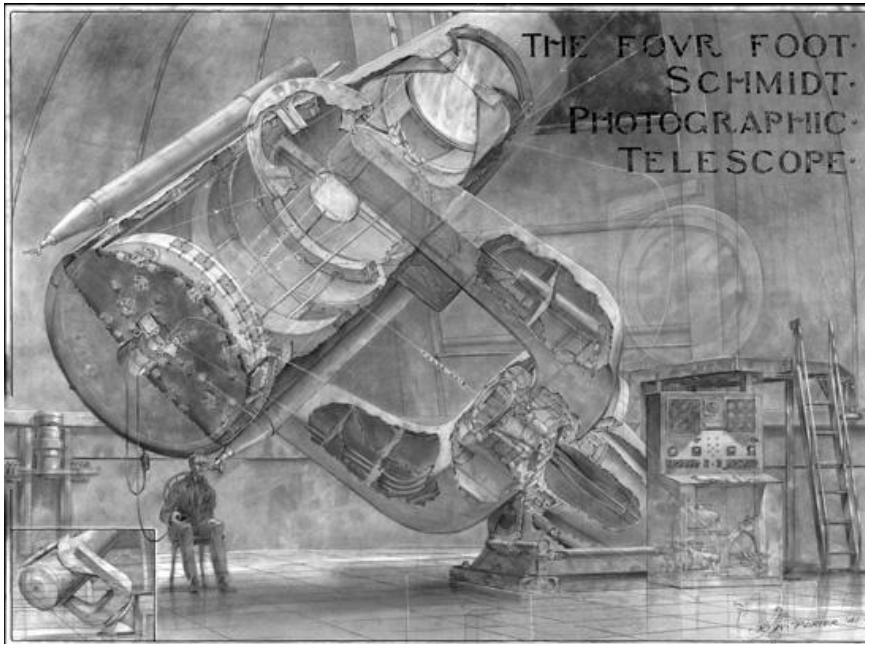
DOI: 10.3847/1538-3881/abe853

Jan van Roestel et al 2021 AJ 161 267

Caltech Library

Zwicky Transient Facility

- Instrument mounted on 48” telescope at Palomar
- PI asked Library to track pubs, right at funding, ...“email librarian”
- Zwicky publications page from CaltechAUTHORS



(Palomar/Caltech/Caltech Archives)

Caltech Library

But…

- PI is at Caltech
- Collaboration is intl
- Our IR exists to document Caltech research
- We don’t have capacity or mandate to harvest addtl papers

The ZTF Collaboration

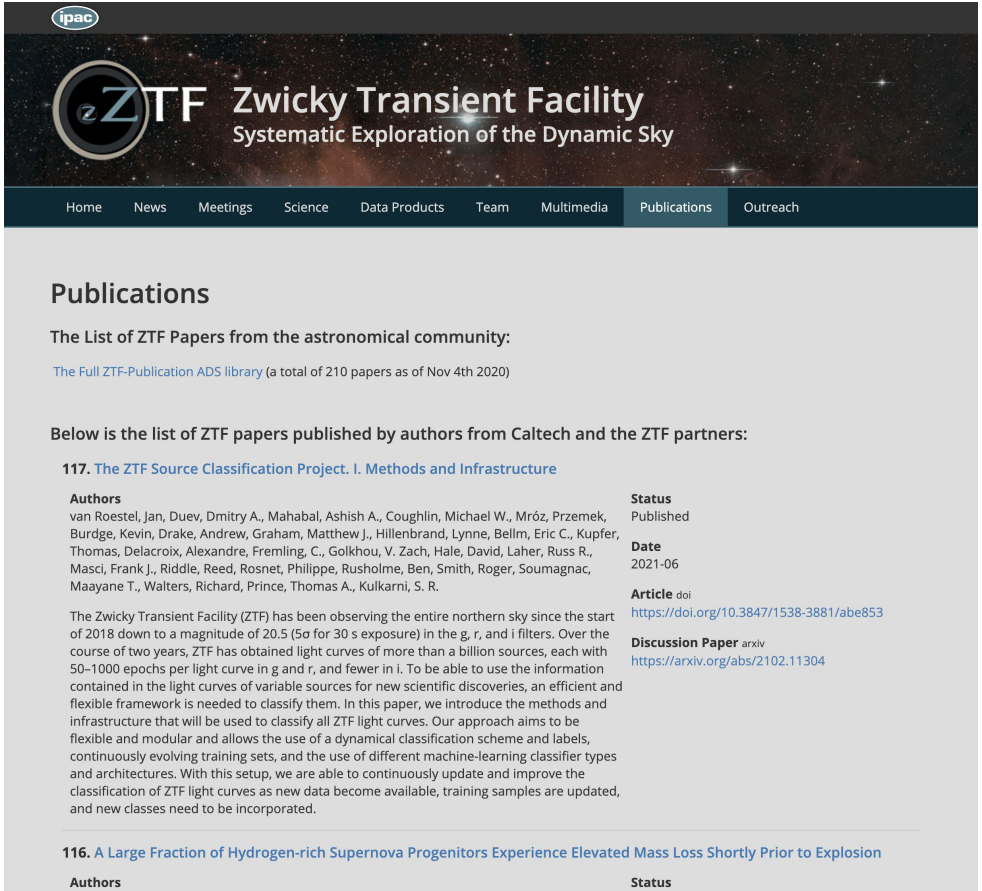
Partners in the Zwicky Transient Facility are:

- Caltech
- IPAC
- Weizmann Institute of Science
- Oskar Klein Center at Stockholm University
- University of Maryland
- Deutsches Elektronen-Synchrotron and Humboldt University
- TANGO Consortium of Taiwan
- University of Wisconsin-Milwaukee
- Lawrence Livermore National Laboratory
- Trinity College Dublin
- Institut national de physique nucléaire et de physique des particules.

Caltech Library

AUTHORS & ADS

- We can track ZTF papers when they include a Caltech author
- But it makes much more sense to use ADS Private Libraries for international efforts like ZTF



Observatories

OVRO >

PALOMAR OBSERVATORY >

W. M. KECK OBSERVATORY >

LIGO >

http://astro.caltech.edu

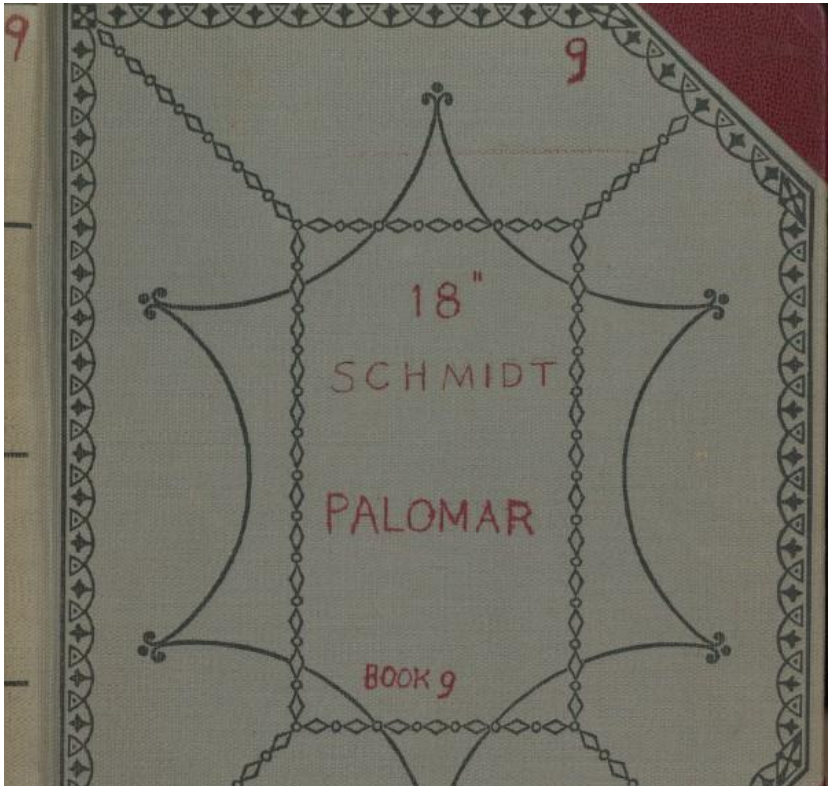
Recent Publications

Minutolo, Lorenzo ; Wandui, Albert et al. (2021) Thermal Kinetic Inductance Detectors Camera: System Level Design, Strategy and Performance Forecast IEEE Transactions on Applied Superconductivity ; Vol. 31 ; No. 5

Bonnerot, Clément ; Lu, Wenbin et al. (2021) First light from tidal disruption events Monthly Notices of the Royal Astronomical Society ; Vol. 504 ; No. 4

van Roestel, Jan ; Duev, Dmitry A. et al. (2021) The ZTF Source Classification Project. I. Methods and Infrastructure Astronomical Journal ; Vol. 161 ; No. 6

For a complete publications list, see feeds.library.caltech.edu



14 July 2014

The Zwicky transient facility observing system

Roger M. Smith, Richard G. Dekany, Christopher Bebek, Eric Bellm, Khanh Bui, John Cromer, Paul Gardner, Matthew Hoff, Stephen Kaye, Shrinivas Kulkarni, Andrew Lambert, Michael Levi, Dan Reiley

Author Affiliations +

Proceedings Volume 9147, Ground-based and Airborne Instrumentation for Astronomy V; 914779 (2014)
https://doi.org/10.1117/12.2070014
Event: SPIE Astronomical Telescopes + Instrumentation, 2014, Montréal, Quebec, Canada

Abstract

The Zwicky Transient Facility (ZTF) is a synoptic optical survey for high-cadence time-domain astronomy. Building upon the experience and infrastructure of the highly successful Palomar Transient Factory (PTF) team, ZTF will survey more than an order of magnitude faster than PTF in sky area and volume in order to identify rare, rapidly varying optical sources. These sources will include a trove of supernovae, exotic explosive transients, unusual stellar variables, compact binaries, active galactic nuclei, and asteroids. The single-visit depth of 20.4 mag is well matched to spectroscopic follow-up observations, while the co-added images will provide wide sky coverage 1.5 – 2 mag deeper than SDSS. The ZTF survey will cover the entire Northern Sky and revisit fields on timescales of a few hours, providing hundreds of visits per field each year, an unprecedented cadence, as required to detect fast transients and variability. This high-cadence survey is enabled by an observing system based on a new camera having 47 deg^2 field of view – a factor of 6.5 greater than the existing PTF camera - equipped with fast readout electronics, a large, fast exposure shutter, faster

Thank you!

Also a local thank you to:
CaltechAUTHORS: George Porter, Tony Diaz
CaltechDATA: Tom Morrell
Docuserve / ILL: Bianca Rios, Ben Perez, Dan Anguka
Digital Library Development: Stephen Davison

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